



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
(Attorney Docket No. 15341US02)

In the Application of: VandenBiesen, et al.

U.S. Serial No.: 10/643,330

Filed: August 19, 2003

For: METHOD OF MAKING SYNTHETIC  
GEMS COMPRISING ELEMENTS  
RECOVERED FROM REMAINS OF A  
SPECIES OF THE KINGDOM  
ANIMALIA

Examiner: Robert Kunemund

Group Art Unit: 1722

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Date of Deposit:

April 24, 2006

**DECLARATION OF INVENTORS UNDER 37 C.F.R. § 1.131**

We, the undersigned inventors, hereby declare as follows:

1. The undersigned Russell P. VandenBiesen is currently employed at International Research & Recovery Corporation, doing business as LifeGem, and his title is Chief Operating Officer. He is a co-inventor of U.S. Patent Application No. 10/643,330 (the "present application").
2. The undersigned Gregory R. Herro is currently employed at LifeGem, and his title is Chief Executive Officer. He is a co-inventor of the present application.
3. The undersigned Dean T. VandenBiesen is currently employed at LifeGem, and his title is Vice President of Operations. He is a co-inventor of the present application.
4. We have been made aware of U.S. Patent Publication No. US 2004/0154528 A1 (the "Page publication") a copy of which is attached to this declaration.
5. On information and belief, the Page publication is the publication of U.S. Patent Application No. 10/364,286 (the "Page application"), which was filed on February 11, 2003, and which has a publication date of August 12, 2004.

**BEST AVAILABLE COPY**

6. Prior to February 11, 2003, we jointly conceived of and developed methods for making a synthetic diamond out of cremated human or animal remains, as described and claimed in Patent Application No. 10/643,330 (the “present application”).
7. Evidence of our conception of the subject matter of the present application prior to February 11, 2003 can be found in U.S. Patent Publication No. US 2003/0017932 A1 (the “VandenBiesen 2003 publication”), attached hereto as Exhibit A. On information and belief, the VandenBiesen 2003 publication was published on January 23, 2003, which is prior to February 11, 2003.
8. Additionally, on information and belief, the VandenBiesen 2003 publication is the publication of U.S. Patent Application No. 10/100,666, which was filed on March 18, 2002, and claims priority to U.S. Provisional Application No. 60/306,053, which was filed on July 17, 2001.
9. Further evidence of our conception of the subject matter of the present application prior to February 11, 2003 can be found in the purchase order attached as Exhibit B. The date of the purchase order is prior to February 11, 2003, although all dates have been removed from the attached papers in conjunction with filing this Declaration because we have been advised that removal of dates preceding February 11, 2003 is appropriate in accordance with §715.07 (II) of the Manual of Patent Examining Procedure.
10. Prior to February 11, 2003, we conceived, for example, a method of making synthetic diamond as described in currently pending independent claim 14 of the present application.
11. Currently pending claim 14 recites a method of making synthetic diamond comprising providing cremated human or animal remains. Evidence of our conception of such a method can be found throughout Exhibit A, including at Abstract, first and second sentences; paragraph 0003; paragraph 0018; paragraph 0019; first sentence; paragraphs 25-27; and claims 1, 3, 5 and 13.
12. We note that Exhibit A discusses the creation of synthetic “gems.” The synthetic diamonds of the present application are synthetic gems, and prior to February 11, 2003, we did contemplate using our methods as described in Exhibit A to produce synthetic diamonds. Evidence of this can be found in the description of synthetic diamonds as being synthetic in Exhibit A at paragraph 0005, third sentence, and paragraph 0006, the second-last sentence. See also paragraph 0013.

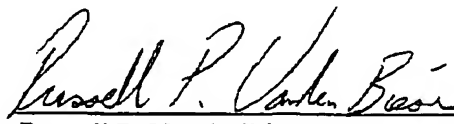
13. Currently pending claim 14 further recites a method of making synthetic diamond comprising collecting residual carbon from said cremated human or animal remains by purifying said cremated human or animal remains in the presence of additional carbon from another source. Evidence of our conception of such a method can be found in Exhibit A at Abstract, fourth sentence; paragraph 0019, third sentence; paragraph 0029, eighth sentence; paragraph 0030, and claims 5-8 and 13-16.
14. Exhibit B provides further evidence that we conceived of a method of making synthetic diamond comprising collecting residual carbon from said cremated human or animal remains by purifying said cremated human or animal remains in the presence of additional carbon from another source, as described in currently pending claim 14, prior to February 11, 2003.
15. Specifically, the purchase order provided as Exhibit B relates to the step of purifying cremated remains in accordance with the method of creating synthetic diamonds that we conceived and developed. Exhibit B instructs that the crucibles listed with the word "Blend" need to have carbon powder added before purification.
16. Currently pending claim 14 further recites converting a method of making synthetic diamond comprising converting said residual carbon to diamond. Evidence of our conception of such a method can be found in Exhibit A at Abstract, second and sixth sentences; paragraph 0005, third sentence; paragraph 0019, fourth sentence; paragraph 0031; and claims 4-5 and 13.
17. Prior to February 11, 2003, we further conceived of a method of making synthetic diamond as described in currently pending independent claim 34 of the present application.
18. Currently pending claim 34 recites a method of making synthetic diamond comprising carbon derived from cremated remains, the method comprising: providing cremated human or animal remains. Evidence of our conception of such a method can be found throughout Exhibit A, including at Abstract, first and second sentences; paragraph 0003; paragraph 0018; paragraph 0019; first sentence; paragraphs 25-27; and claims 1, 3, 5 and 13.
19. Currently pending claim 34 further recites a method of making synthetic diamond comprising contacting the cremated remains with additional carbon. Evidence of our conception of such a method can be found in Exhibit B.

20. Specifically, Exhibit B relates to the step of purifying cremated remains in accordance with the method of creating synthetic diamonds that we conceived and developed. Exhibit B instructs that the crucibles listed with the word "Blend" need to have carbon powder added before purification
21. Currently pending claim 34 further recites a method of making synthetic diamond comprising purifying the cremated remains while the cremated remains are in contact with said additional carbon, yielding purified carbon derived at least in part from said cremated remains. As discussed above, Exhibit B provides evidence of our conception of such a method. Further evidence of our conception of such a method can be found in Exhibit A at Abstract, fourth sentence; paragraph 0019, third sentence; paragraph 0029, eighth sentence; paragraph 0030, and claims 5-8 and 13-16.
22. Currently pending claim 34 further recites converting said purified carbon derived at least in part from said cremated remains to diamond. Evidence of our conception of such a method can be found in Exhibit A at Abstract, second and sixth sentences; paragraph 0005, third sentence; paragraph 0019, fourth sentence; paragraph 0031; and claims 4-5 and 13.
23. Prior to February 11, 2003, we also conceived that embodiments of the method of making synthetic diamond could comprise other elements, such as those described in currently pending dependent claims 16, 17 and 35-46.
24. For example, prior to February 11, 2003, we conceived that embodiments of the method of making synthetic diamond could comprise a converting step carried out under conditions effective to form a diamond gemstone, as described in currently pending claim 16. Evidence of our conception of such a method can be found in Exhibit A at Abstract, fifth sentence; paragraph 0019, fourth sentence; and paragraph 0031.
25. Prior to February 11, 2003, we also conceived that embodiments of the method of making synthetic diamond could further comprise faceting said diamond gemstone, as described in currently pending claim 17. Evidence of our conception of such a method can be found in Exhibit A at Abstract, sixth sentence; paragraph 0019, fifth sentence; and paragraph 0032.
26. We also conceived, prior to February 11, 2003, that embodiments of the method of making synthetic diamond could comprise the use of cremated human or animal remains are the result of cremation at conventional conditions, as described in currently pending claim 35. Evidence of our conception of such embodiments can be found in Exhibit A at paragraph 0026.

27. Prior to February 11, 2003, we conceived that embodiments of the method of making synthetic diamond could comprise cremation at conventional conditions, wherein said conventional conditions include a temperature of 1400 degrees to 1800 degrees Fahrenheit (760 to 980 degrees C), as described in currently pending claim 36. Evidence of our conception of such embodiments can be found in Exhibit A at paragraph 0026.
28. Prior to February 11, 2003, we conceived that embodiments of the method of making synthetic diamond could comprise cremation at conventional conditions, wherein said conventional conditions include the presence of oxygen, as described in currently pending claim 37. Evidence of our conception of such embodiments can be found in Exhibit A at paragraph 0026.
29. We also conceived, prior to February 11, 2003, that embodiments of the method of making synthetic diamond could comprise the use of cremated remains, wherein said cremated remains as provided have been reduced to ashes, as described in currently pending claim 38. Evidence of our conception of such embodiments can be found in Exhibit A at Paragraph 0029, second sentence.
30. We further conceived, prior to February 11, 2003, that embodiments of the method of making synthetic diamond could comprise the use of cremated remains, wherein said cremated remains at the providing step consist essentially of bone ash and a small amount of carbon, as described in currently pending claim 39. Evidence of our conception of such embodiments can be found in Exhibit A at Paragraph 0029, second sentence.
31. Prior to February 11, 2003, we conceived that embodiments of the method of making synthetic diamond could comprise a purifying step, wherein the purifying step is a halogen purification technique, as described in currently pending claim 41. Evidence of our conception of such embodiments can be found in Exhibit A at Abstract, fourth sentence; paragraph 0019, third sentence; and paragraph 0030.
32. We further conceived, prior to February 11, 2003, that embodiments of the method of making synthetic diamond could comprise a halogen purification technique, wherein the halogen purification technique is carried out by heating the remains in a furnace in the presence of chlorine gas under conditions effective to remove essentially all materials but carbon from the cremated remains, as described in currently pending claim 42. Evidence of our conception of such embodiments can be found in Exhibit A at paragraph 0030, sentences five through seven.

33. We additionally conceived, prior to February 11, 2003, that embodiments of the method of making synthetic diamond could comprise a halogen purification technique, wherein the conditions of the halogen purification technique are also effective to graphitize said carbon, as described in currently pending claim 43. Evidence of our conception of such embodiments can be found in Exhibit A at paragraph 0030, eighth sentence.
34. Prior to February 11, 2003, we conceived that embodiments of the method of making synthetic diamond could comprise a converting step, wherein said converting step is carried out by crystal growth sublimation, as described in currently pending claim 44. Evidence of our conception of such embodiments can be found in Exhibit A at Abstract, fifth sentence; paragraph 0019, fourth sentence; and paragraph 0031.
35. We further conceived, prior to February 11, 2003, that embodiments of the method of making synthetic diamond could comprise a converting step, wherein said converting step is carried out under conditions effective to form a diamond gemstone, as described in currently pending claim 45. Evidence of our conception of such a method can be found in Exhibit A at Abstract, fifth sentence; paragraph 0019, fourth sentence; and paragraph 0031.
36. Prior to February 11, 2003, we conceived that embodiments of the method of making synthetic diamond could further comprise faceting said diamond gemstone, as described in currently pending claim 46. Evidence of our conception of such a method can be found in Exhibit A at Abstract, sixth sentence; paragraph 0019, fifth sentence; and paragraph 0032.
37. The present inventors thus conceived of the methods of creating synthetic diamonds as claimed in the present application before February 11, 2003.

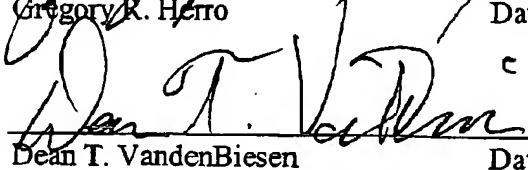
All statements made herein of our own knowledge are true and all statements made upon information and belief are believed to be true. We, the undersigned, further acknowledge that willful false statements and the like made in this declaration are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001 and may jeopardize the validity of the present application or any patent issuing thereon.

 4-24-06  
Russell P. VandenBiesen Date

U.S. Serial No.: 10/643,330 -- Declaration of Inventors Under 37 C.F.R. § 7.131

  
Gregory R. Herro

4/24/2006  
Date

  
Dean T. VandenBiesen

4/24/2006  
Date

# Exhibit A





US 20030017932A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2003/0017932 A1**  
**VandenBiesen et al.** (43) **Pub. Date: Jan. 23, 2003**

(54) **METHOD FOR MAKING SYNTHETIC GEMS  
COMPRISING ELEMENTS RECOVERED  
FROM COMPLETE OR PARTIAL HUMAN  
OR ANIMAL REMAINS AND THE PRODUCT  
THEREOF**

**Publication Classification**

(51) **Int. Cl.<sup>7</sup>** ..... **C30B 29/02**

(52) **U.S. Cl.** ..... **501/86**

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IL (US); **Dean T. VandenBiesen**,  
Oshkosh, WI (US)

(57) **ABSTRACT**

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**CHICAGO, IL 60603 (US)**

The invention includes a novel synthetic gem comprising elements recovered from complete or partial human or animal remains. The invention also includes the process of manufacturing synthetic gems comprising carbon from a vertebrate by cremating human or animal remains to produce carbon in a particulate and gaseous form. The carbon is then filtered using a conventional filtering technique. The carbon and other elements are then purified and graphitized using a Halogen Purification technique. The gems are then created using conventional sublimation techniques. The synthetic gems may be faceted and polished utilizing conventional faceting and polishing techniques. The gems may also utilize a conventional marking system.

(21) **Appl. No.:** **10/100,666**

(22) **Filed:** **Mar. 18, 2002**

**Related U.S. Application Data**

(60) **Provisional application No. 60/306,053, filed on Jul. 17, 2001.**

**METHOD FOR MAKING SYNTHETIC GEMS  
COMPRISING ELEMENTS RECOVERED FROM  
COMPLETE OR PARTIAL HUMAN OR ANIMAL  
REMAINS AND THE PRODUCT THEREOF**

[0001] This is a non-provisional application of provisional patent application Ser. No. 60/306,053 filed Jul. 17, 2001.

**BACKGROUND OF THE INVENTION**

**[0002] 1. Field of the Invention**

[0003] This invention relates to a method for making synthetic gems comprising elements recovered from complete or partial human or animal remains. This invention also relates to synthetic gems comprising elements recovered from complete or partial human or animal remains.

**[0004] 2. Description of the Related Art**

[0005] Synthetic gems have been manufactured since the 1960s as an attempt to substitute for naturally occurring gems. Advances in the methods of manufacture have made it possible to produce synthetic gems of equal or better appearance than naturally occurring gems. Examples of these synthetic gems include the synthetic diamonds disclosed in U.S. Pat. No. 4,042,673, and the moissanite gems disclosed in, U.S. Pat. Nos. 5,762,896, 6,025,289, and 6,200,917.

[0006] Even though synthetic gems can be indistinguishable from naturally occurring gems to the untrained eye, a trained person in the jewelry field can easily distinguish between naturally occurring and synthetic gems by using the following methods, among others: viewing the refraction lines under a microscope, viewing metallic inclusions through the microscope, subjecting synthetic gems to short-wave ultraviolet light and viewing patterns caused by seed crystals under the microscope. Because of the relative ease with which a trained person can distinguish synthetic gems from naturally occurring gems, the synthetic gem's value is much lower than that of a naturally occurring gem. These factors have severely limited the appeal of the synthetic gems, and the success of the synthetic gem business as a whole. In the case of synthetic diamonds the cost to produce them is equal to, or more expensive than natural gem quality diamonds. Because of these factors, naturally occurring gems remain much more popular and valuable than synthetic gems.

[0007] Producers of synthetic gems are currently using graphite that is mined from beneath the earth's surface, or synthetic graphite made from burning wood in the absence of oxygen, as their source of carbon for producing synthetic gems. This carbon source cannot be traced to any specific vertebrate, and therefore a gem produced from this source would have several disadvantages when compared to the present invention: a synthetic gem made from mined graphite would not be used as a memorial gem in a memorial or funeral service for a deceased human or animal; a synthetic gem made from mined graphite would not be used as a keepsake that preserves the remains and memories of the deceased for bereaved family, friends, loved ones, lovers, or acquaintances; a synthetic gem made from mined graphite would not provide a symbol of the bond between two individuals who wish to express their commitment by providing ingredients to a single synthetic gem; and a synthetic

gem made from mined graphite would not produce a unique collectable gem celebrating a famous person.

**OBJECTS AND ADVANTAGES**

[0008] It is, therefore, an object of the present invention to provide a novel synthetic gem comprising elements recovered from complete or partial human remains.

[0009] It is also an object of the present invention to provide a method for making a synthetic gem comprising elements recovered from complete or partial human remains.

[0010] It is yet another object of the present invention to provide a novel synthetic gem comprising elements recovered from complete or partial animal remains.

[0011] It is still another object of the present invention to provide a method for making a synthetic gem comprising elements recovered from complete or partial animal remains.

[0012] It is another object of the present invention to provide a synthetic gem to be used in a memorial or funeral service for a deceased human or animal.

[0013] It is a further object of the present invention to provide a synthetic gem to be used as a permanent keepsake that preserves the remains and memories of the deceased with a diamond-quality gem for bereaved family, friends, loved ones, lovers, or acquaintances.

[0014] It is still another object of the present invention to provide a synthetic gem which is a symbol of the bond between two individuals who wish to express their commitment by providing ingredients to a single synthetic gem.

[0015] It is yet another object of the present invention to provide a synthetic gem which provides a unique authenticated collectable gem celebrating a famous person.

[0016] Accordingly, the present invention eliminates the disadvantages of natural gems which cannot be traced to any specific vertebrate.

[0017] These together with other objects of the invention, along with the various features of novelty which characterize the invention, are pointed out with particularity in the detailed description annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and the specific objects attained by its uses, reference should be had to the accompanying descriptive matter in which there is illustrated a preferred embodiment of the invention.

**BRIEF SUMMARY OF THE INVENTION**

[0018] A broad aspect of the invention comprises a novel synthetic gem comprising elements recovered from complete or partial human or animal remains. The present invention also includes the method for making a synthetic gem comprising elements recovered from complete or partial human or animal remains.

[0019] The process of manufacturing synthetic gems comprising carbon from a vertebrate comprises the steps of cremating human or animal remains to produce carbon in a particulate and gaseous form. The carbon is then collected or filtered using a conventional collection or filtering tech-

nique. The carbon and other elements are then purified and graphitized, using a High Temperature Vacuum Induction Purification technique. The gems are then created using conventional sublimation techniques. The synthetic gems may be faceted and polished utilizing conventional faceting and polishing techniques. The gems may also utilize a conventional marking system.

[0020] In use, the synthetic gem can function as a memorial item to be used in a funeral or memorial ceremony by survivors, family, friends, loved ones, and acquaintances.

[0021] In addition, it can be used to remember a deceased loved one by mounting it in a number of different ways including, but not limited to: keepsakes, memorials, mementos, collectors items, loose gems, gems set in rings, watches, bracelets, pendants, earrings, anklets, waist bands, ornaments, crucifixes, rosaries, necklaces, statues, figurines, sculptures, art work, or custom gold, silver, platinum, brass, bronze, stainless steel, or copper settings.

[0022] There has thus been outlined, rather broadly, the more important features of the invention in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are, of course, additional features of the invention that will be described hereinafter and that will form the subject matter of the invention. Those skilled in the art will appreciate that the conception, upon which this disclosure is based, may readily be utilized as a basis for the designing of other devices or methods for carrying out the several purposes of the present invention. It is important, therefore, that the invention be regarded as including such equivalent constructions and methods insofar as they do not depart from the spirit and scope of the present disclosure.

#### DRAWINGS

[0023] Not Applicable

#### DETAILED DESCRIPTION OF THE INVENTION

[0024] While the invention may be susceptible to embodiments in different forms, there will be described in detail, specific embodiments with the understanding that the present disclosure is to be considered an exemplification of the principles of the invention, and is not intended to limit the invention to that which is described herein.

[0025] The present invention is a novel synthetic gem comprising elements recovered from complete or partial human or animal remains. The present invention also includes the method for making a synthetic gem comprising elements recovered from complete or partial human or animal remains.

[0026] The process of manufacturing synthetic gems comprising carbon from a vertebrate begins with one of several conventional cremation processes well-known in the art. Cremation as defined by World Book Encyclopedia "is burning a dead body to ashes." The cremation is performed in a building called a crematory or crematorium. The body is put in a coffin or other container, which is burned in a special oven for several hours. The body is generally burned at a temperature that can range from approximately 1000 degrees Fahrenheit up to approximately 1800 degrees Fahr-

enheit. In order to facilitate higher airborne particulate carbon levels, a higher gas to air ratio is used so that the gas burners cremate the body at the low end of the temperature range. This cremation process produces sufficient carbon in particulate and gaseous form, and is collected using filtering or collection techniques. The cremation processes that could be used include, but are not limited to those described in the following patents: U.S. Pat. Nos. 5,957,065 and 4,603,644 and the U.S. Patents cited therein.

[0027] Carbon elements produced during the cremation process are collected using one of several conventional collection or filtering techniques before these gases escape into the air from the smokestack of the cremation oven. The filtering or other techniques that could be used for this process include, but are not limited to: electrostatic filtering, dry scrubbing, cartridge filtering, and wet scrubbing, as described in but not limited to the following patents: U.S. Pat. Nos. 5,406,582, 5,198,001, 6,241,809, 6,231,648, 6,231,643, 6,110,256, 6,113,795, 6,106,592, 6,096,118, 6,203,600 and 6,193,782. The preferred process for carbon collection is to retrieve the carbon from the cremation oven after the body has been cremated. The preferred process for collection begins with the oven operator positioning the body in the oven so that the head and chest area are not positioned directly underneath the main burner. This can be accomplished by positioning the body to the left or right side of the main burner, or positioning the body so that the legs and feet are underneath the main burner rather than the head and torso. Positioning the body in this manner assures that carbon will remain in the body's head area. The carbon can then be gathered by hand, or by using a metal shovel or scoop, or the like. Alternatively, one or more body parts may be cremated.

[0028] An alternative process for carbon collection is using a filter system. The filtering is accomplished by use of a horizontal cartridge dust collector with special high temperature fiberglass filter cartridges with 2" pleats, ceramic potting, and temperature resistant silicone gasketing. The filters are capable of handling temperatures of 500 degrees Fahrenheit, and 2400 cfm of air flow. The total filter area is 996 square feet and provides an air to cloth ratio of 4:1. This ratio is needed in order to bleed in approximately 65% of ambient air to cool the air below 500 degrees Fahrenheit. A 7.5 horsepower motor/blower is included in the filter housing to provide up to 4000 cfm air flow to maintain proper flow through the filter media. The carbon particles will be removed from the filter with reverse pulses of air, and deposited in a metal drawer below the filter cartridges.

[0029] Another alternative embodiment for carbon collection involves collecting carbon from pulverized cremated remains. These remains consist mostly of ash, but depending on how the cremation was performed, there may be traces of carbon particles mixed in with the ashes. The remains can be placed in a vacuum induction furnace. The furnace is heated to 2000 degrees centigrade in a vacuum ranging from 30 torr to 500 torr. Chlorine gas is injected into the furnace, and reacts with the impurities to form chlorides. The impurities leave the carbon in the form of chloride gases, and are filtered as they exit the furnace. The ash is removed leaving carbon. Once these particles of carbon have been collected, they are purified, and graphitized.

[0030] The carbon and other elements are purified, and graphitized using conventional carbon purification tech-

niques. The preferred purification technique is Halogen Purification. This is done with the use of a High Temperature Vacuum Induction Furnace. The High Temperature Vacuum Induction Furnace utilizes vacuum pressure in the range of 30 torr to 500 torr and a temperature up to 3000 degrees Centigrade. Chlorine gas is injected into the furnace, and reacts with the impurities to form chlorides. The impurities leave the carbon in the form of chloride gases, and are filtered as they exit the furnace. After the impurities have been removed, the carbon that remains is pure within 10 ppm. In addition to being pure within 10 ppm, the carbon also becomes graphitized by the high temperatures. It is necessary to provide graphite for the crystal growth process.

[0031] Using the process of crystal growth from sublimation according to techniques of the type described but not limited to the process described in U.S. Pat. Nos. 34,061, 6,200,917, 6,025,289, 6,045,613, 4,042,673 and 5,762,896, the purified/graphitized carbon from vertebrates is used to replace or supplement purified/graphitized carbon of non-vertebrates, and processed into synthetic gems comprising carbon from vertebrates.

[0032] The synthetic gems may be faceted and polished utilizing conventional faceting and polishing techniques, which are well-known in the art.

[0033] The gems, as a client selected option, may utilize a laser marking system such as that disclosed in U.S. Pat. No. 6,211,484 in order to mark each gem with its own individual identification corresponding to the vertebrate which supplied at least a portion of the carbon for the gem.

[0034] In use, the synthetic gem can function as a memorial item to be used in a funeral or memorial ceremony by survivors, family, friends, loved ones, and acquaintances.

[0035] In addition, it can be used to remember a deceased loved one by mounting it in a number of different ways including, but not limited to: keepsakes, memorials, mementos, collectors items, loose gems, gems set in rings, watches, bracelets, pendants, earrings, anklets, waist bands, ornaments, crucifixes, rosaries, necklaces, statues, figurines, sculptures, art work, or custom gold, silver, platinum, brass, bronze, stainless steel, or copper settings.

[0036] The resulting synthetic gem quality crystal comprising carbon from a vertebrate has a unique character to it, because it specifically relates to the vertebrate which supplied at least a portion of the carbon for the gem. This personal touch makes it much more valuable and meaningful to the owner of such a gem. The gem could also be marked with its own individual identification corresponding to the vertebrate that the gem originated from so that it could not be confused with a synthetic gem not comprising carbon from a vertebrate.

[0037] Hence, while the invention has been described in connection with a preferred embodiment and method, it will be understood that it is not intended that the invention be limited to that embodiment and method. On the contrary, it is intended to cover all alternatives, modifications and equivalents as may be included within the spirit and scope of the invention as disclosed.

[0038] As to the manner of usage and operation of the instant invention, same should be apparent from the above

disclosure, and accordingly no further discussion relevant to the manner of usage and operation of the instant invention shall be provided.

[0039] With respect to the above description then, it is to be realized that the optimum proportions for the elements of the invention, and variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships described in the specification are intended to be encompassed by the present invention.

[0040] Therefore, the foregoing is considered illustrative of only the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact method, construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed is:

1. A synthetic gem comprising elements recovered from human remains.

2. The gem of claim 1 wherein the elements comprise carbon.

3. A synthetic gem comprising elements recovered from animal remains.

4. The gem of claim 3 wherein the elements comprise carbon.

5. The method of making a synthetic gem comprising elements recovered from human remains comprising the steps of:

- a) cremating human remains to produce carbon;
- b) filtering the carbon;
- c) purifying the carbon;
- d) graphitizing the carbon; and
- e) creating gems using crystal growth sublimation.

6. The method of claim 5 wherein the carbon is purified using a Halogen Purification technique.

7. The method of claim 6 wherein the Halogen Purification technique comprises a High Temperature Vacuum Induction Purification technique.

8. The method of claim 5 wherein the carbon is graphitized using a High Temperature Vacuum Induction Purification technique.

9. The method of claim 5 further comprising the steps of faceting and polishing the gems.

10. The method of claim 6 further comprising the steps of faceting and polishing the gems.

11. The method of claim 5 further comprising the steps of marking the gems with various indicia.

12. The method of claim 10 further comprising the steps of marking the gems with various indicia.

13. The method of making a synthetic gem comprising elements recovered from animal remains comprising the steps of:

- a) cremating animal remains to produce carbon;
- b) filtering the carbon;
- c) purifying the carbon;
- d) graphitizing the carbon; and
- e) creating gems using crystal growth sublimation.

14. The method of claim 13 wherein the carbon is purified using a Halogen Purification technique.

15. The method of claim 14 wherein the Halogen Purification technique comprises a High Temperature Vacuum Induction Purification technique.

16. The method of claim 13 wherein the carbon is graphitized using a High Temperature Vacuum Induction Purification technique.

17. The method of claim 13 further comprising the steps of faceting and polishing the gems.

18. The method of claim 14 further comprising the steps of faceting and polishing the gems.

19. The method of claim 13 further comprising the steps of marking the gems with various indicia.

20. The method of claim 18 further comprising the steps of marking the gems with various indicia.

\* \* \* \* \*

## Exhibit B

## Purchase Order

Date: **REDACTED**

Order No. Verbal Dean

Ship to:

Mr. Chuck Miller  
Sales  
Advanced Carbon Technologies  
220 Main Street  
Topton, PA 19562

P.O. Number: Verbal Dean

Please process the following crucibles containing carbon per the high temperature purification process as specified by Bob Froberg

\*Attention Chuck Miller - the crucibles with Red Tape on the lid with the notation "Blend" need to have carbon powder added before purification.

<u>Crucible No.</u>	<u>Unit Price</u>
EMM102502LG00002	\$150.00/each
MAK110502LG00003	" "
YET110602LG00001	" "
JOE1111202LG00005 "Blend"	" "
HET1111502LG00004 "Blend"	" "
JVT111902LG00006	" "
HJL1102COLG00007	" "
BEX1102WILG00008	" "
WJD1102ABLG00009	" "
KNPI202PALG00010	" "
FJJ1202CALG00011	" "
PZD1102NCLG00012	" "
LG-02-0000-00	" "
EXPERIMENTAL BATCH	" "

14 crucibles total. Per discussion with Frank Schoch price per crucible is \$150.00.

**Total** \$2,100.00

**Sales Tax** tax exempt

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